

question was the effect on a Part 15 device of a wideband forward link signal within interfering range and operating with a 1% transmit activity factor. Thus, the comments associated with the first two bullets of the 5-bullet list on pp. 6-7 of the Jandrell letter are irrelevant.

The third bullet, dealing with the aggregation of base station transmissions, has already been discussed. The fourth bullet relates to the assumption of multiple Part 15 devices (in this particular case, cordless telephones) being within interfering range of one another. Clearly, in a high-density environment such as an apartment or office building, there may be a number (*i.e.*, a dozen or more) cordless telephones in use simultaneously and within interfering range of one another. While the cordless telephone interference analysis criticized by Mr. Jandrell accounted for this (indeed, the effects of "collisions" among the frequency hopping cordless telephones is fundamental to the analysis), Mr. Jandrell's fourth bullet suggests that he did not understand this, since he implies that cordless-to-cordless interference was not taken into account.

Mr. Jandrell's fifth bullet, on p. 7 of his letter, suggests that Part 15 devices should be designed to accommodate the interference environment that will be created by the wideband forward links. He mentions coding and interleaving as examples, noting that such measures are commonly used in mobile communications. While this is true, Mr. Jandrell's argument on this point is simplistic. Digital mobile radio air interfaces are all designed to optimize frequency reuse and spectrum efficiency in a high-speed, fast-fading environment. Accordingly, low-rate speech coding, with forward error correction and interleaving (to randomize the bit errors) are used, with an associated increase in the complexity and cost of the mobile and base units. It is noteworthy that **none** of the standardized digital cordless air interfaces¹⁹ use these measures, because the design objective is affordable wireless communication in a quasi-stationary (as opposed to vehicular mobile) environment.

Mr. Jandrell is essentially suggesting that cordless telephones be designed with what effectively are countermeasures for the fast fading associated with high-speed mobile communication, simply to be able to operate in the presence of Pinpoint's signal format. He states: "it should be incumbent for the phone designers to utilize such sound engineering before proposing the redesign of licensed systems".²⁰ This statement borders on the ridiculous, since there are many cordless phones already in operation in the 902-928 MHz band, whereas Pinpoint's "licensed system" exists only as a concept with no subscribers, questionable market need, and several limited-functionality prototype base

¹⁹The standardized digital cordless telephone air interfaces are CT2, DECT (for Digital European Cordless Telecommunications), and PHS (for Personal Handyphone System).

²⁰Jandrell letter at p. 7.

stations and mobiles. Moreover, the objective of this proceeding was to fashion a set of operating rules for licensed LMS, not to impose unnecessary design burdens on unlicensed Part 15 devices.

Summary

As has been shown here, using Pinpoint's own assessment of the capacity margins necessary to comfortably accommodate variations in radiolocation traffic loading and peaking, a 250-kHz channel, three of which are provided in the Commission's *Order*, will be adequate to accommodate the forward link capacity required by Pinpoint's design concept, despite Pinpoint's continued insistence to the contrary.

Pinpoint also argues that the Part 15 community's concerns about the interference potential of the wideband forward link are overstated, and that most of the time the transmit activity factor of a typical base station will be considerably lower than 1%. This would be small comfort to a Part 15 system sited near a particularly busy Pinpoint base station, or a base station that is put into a test or diagnostic mode and transmits with a high activity factor for an extended period of time.

The interference that will occur from a high-power wideband forward link as proposed by Pinpoint, to other users of the 902-928 MHz band, will obviously vary according to a number of factors, including the local market penetration of the vehicle location service, time of day, etc. However, it has been clearly demonstrated in the record of this proceeding that the effect of that interference can be significant. Since the use of a wideband forward link is unnecessary to achieve even the high capacity envisioned by Pinpoint, the obvious solution is to use a narrowband approach for the forward link and avoid the interference problem altogether.

CERTIFICATE OF SERVICE

I, Stephanie F. Jones, do hereby certify that the Telecommunications Industry Association's Comments in PR Docket 93-61 have been served on this 24th day of May, 1995, by first-class prepaid postage, to the persons on the attached list.



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